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Article: Trying to clear the air: e-cigarette use and periodontal disease

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REVIEW

Literature Review

Trying to clear the air: e-cigarette use and periodontal disease

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Key points

Surveillance evidence on the effect of e-cigarette usage on periodontal health and limitations in this area of study.

Education on the possible effects of e-cigarette usage on periodontal tissue, personal hygiene, and smoking cessation, and compares to conventional smoking and non-smoking.

Address the discrepancy between past perception of e-cigarette usage and the findings of current evidence.

Provides a summary of current guidelines and advice to practitioners.

Abstract

Introduction With record rates of e-cigarette use in the United Kingdom, it is becoming more important that dental professionals understand the consequences of e-cigarette use on oral health.

Method A narrative review considers the current body of literature regarding e-cigarette use and periodontal health and disease.

Results Some studies have found that e-cigarette users had worsened periodontal health and poorer response to periodontal treatment compared to non-smokers. However, there is mixed evidence on this topic and the current evidence base remains limited, with only high-quality studies available. Still, although current research suggests that e-cigarettes may be associated with periodontal disease, further research is required. Inherent methodological studies will be required to improve the evidence base.

Conclusion In the meantime, the guidance from a single Society of Periodontology and Oral Implantology (SOPOI) expert panel is that lack of information and research available. The National Institute for Health and Care Excellence (NICE) and the Royal Society for Public Health (RSPH) believe that e-cigarettes may be a place for e-cigarettes as an aid to quitting smoking, supporting patients to become tobacco-free. It would, however, be sensible for dental practitioners to encourage negative health habits, including e-cigarette use, unless to replace a potentially more dangerous habit, such as conventional smoking.

Introduction

The prevalence of e-cigarette use (vaping) has increased significantly, with record rates of use reaching 9.1% in the United Kingdom (UK).¹ In 2018, e-cigarettes were more popular than ever, with 200 million users. The literature on this subject is limited compared to that of conventional smoking. However, there are emerging trends in the literature,

explored in this narrative review, which inform the current guidance that clinicians should implement in practice.

Aim

To educate clinicians on the current literature regarding the impacts of e-cigarette usage on periodontal health and its limitations, according to current guidance provided.

Methods

The search strategy was developed by the Society of Periodontology and Implant Dentistry (SOPOI) webinar, 'E-cigarettes: vaping a risk for periodontal health?' by students, for students, which was held on 22 March 2019.

Altogether, a search was conducted using PubMed and Google Scholar. Search terms included combinations of 'e-cigarette', 'vaping', 'systemic effects', 'periodontal health', 'periodontal status',

'smoking-related treatment', 'implant outcomes', and 'smoking-related periodontitis' as keywords. In this area, a narrative review approach was considered appropriate to synthesize the existing literature.

To inform the guidance and section, relevant guidelines and recommendations were sourced from the official websites of the National Institute for Health and Care Excellence (NICE), RSPH, and the Delivering Better Oral Health (DBOH) programme, which is a joint venture of the Health Improvement and Dissemination, Department of Health and Social Care, NHS England and NHS Improvement (these are a concern of the data of the programme submission).

Characteristics of e-cigarette users

Most e-cigarette users are current or previous smokers, though never-smokers has been reported to be rare.² Among men is more common, with 9.5% of men 16 years and older reporting e-cigarette use daily or occasionally;

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1. e-cigarette use varies with age and sex. According to the findings of this article, which of the below statements is **correct**?

- A. e-cigarettes are used at least weekly by 7.9% of women aged 15 or less
- B. e-cigarettes are used at least weekly by 40.6% of people aged over 60
- C. e-cigarettes are used daily/occasionally by more women than men in the 16-59 age group
- D. e-cigarettes are used daily/occasionally by 9.5% of men aged 16 years or older

2. e-cigarette use may contribute to periodontal disease by which mechanism?

A. increased levels of periodontal pathogens

B. elevated inflammation in the periodontal tissues

C. persistent inflammation leading to bone resorption and tissue degradation

D. all of the above

3. Very brief advice from the *Delivering Better Oral Health* toolkit to help smokers quit smoking involves:

A. Action, Address, Maintain

B. Ask, Advise, Act

C. Alert, Address, Action

D. Activate, Distract, Deliver

4. Risk for periodontal disease can be ranked as follows:

- A. cigarette smokers > e-cigarette users
> non-smokers
- B. cigarette smokers < e-cigarette smokers = non-smokers
- C. cigarette smokers = e-cigarette smokers > non-smokers
- D. cigarette smokers > e-cigarette smokers = non-smokers

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